

New Combinations in North American *Schoenoplectus*, *Bolboschoenus*, *Isolepis*, and *Trichophorum* (Cyperaceae)

S. Galen Smith

Department of Biology, University of Wisconsin-Whitewater, Whitewater,
Wisconsin 53190, U.S.A.

ABSTRACT. Correct names are provided for Volume 11 of the *Flora of North America* for taxa segregated from *Scirpus* sensu lato. *Schoenoplectus validus* is placed in synonymy under *Sch. tabernaemontani*. New combinations made herein are: *Sch. acutus* var. *occidentalis*; *Sch.* × *steinmetzii* (pro sp.; = *Sch. heterochaetus* × *tabernaemontani*); *Sch. pungens* var. *longispicatus*; *Sch. pungens* var. *badius* (*Scirpus americanus* subsp. *monophyllus* var. *monophyllus*, misapplied); *Sch.* × *contortus* (= *Sch. americanus* × *pungens*); *Sch. hallii*; *Bolboschoenus glaucus* (Lamarck) (*Scirpus tuberosus*, misapplied); *Isolepis molesta*; *Trichophorum clementis*; and *T. clintonii*.

The following new combinations, synonymies, and typifications provide correct names in *Schoenoplectus*, *Bolboschoenus*, *Isolepis*, and *Trichophorum*, all segregated from *Scirpus* sensu lato (Cyperaceae) for the upcoming Volume 11 of the *Flora of North America* (Morin et al. [in prep.]). Descriptions and keys for identifying the taxa included here will be provided in the upcoming *Flora*. Types examined for this study by A. E. Schuyler, who provided me with information on them, are indicated by !Schuyler. Types that I have seen only as photocopies or photographs provided by herbarium curators or microfiches in libraries are indicated by !photo.

1. *Schoenoplectus acutus* (G. H. E. Muhlenberg ex J. Bigelow) A. Löve & D. Löve, Bull. Torrey Bot. Club 81: 33. 1954. *Scirpus acutus* G. H. E. Muhlenberg ex J. Bigelow, Fl. Boston.: 15. 1814. *Schoenoplectus lacustris* L. subsp. *acutus* A. Löve & D. Löve, Taxon 30: 849. 1981. TYPE: U.S.A. Massachusetts: Fresh Pond [near Cambridge], July 1853, Herb. William Boott, s.n. (neotype, GH, selected here).

I have selected as neotype the only known specimen of *Scirpus lacustris* as traditionally defined that was collected at Fresh Pond. No specimens

from the Boston area that could have been seen by Bigelow have been located (Pamela White, GH, pers. comm.). Also, there is no direct evidence that Bigelow saw the Muhlenberg herbarium specimens; these add further confusion because each of the two sheets (labeled *maculatus*) in Folder 63 bears a mixed collection of seven or eight culms of *Schoenoplectus acutus*, *Sch. tabernaemontani*, and putative hybrids as described by me (Smith, 1969).

Schoenoplectus acutus is part of a difficult worldwide group that includes *Sch. lacustris* (L.) Palla, *Sch. tabernaemontani* (C. C. Gmelin) Palla, and *Sch. heterochaetus* (Chase) Sojak. Koyama (1962) treated the entire complex as the single species *Scirpus lacustris* and placed *Scirpus acutus* in synonymy under *Scirpus lacustris* subsp. *glaucus* (J. E. Smith) C. J. Hartman (see *Sch. tabernaemontani* below).

Two varieties are here recognized for North America:

a. *Schoenoplectus acutus* var. *acutus*.

Scirpus lacustris L. var. *condensatus* C. H. Peck, Rep. (Annual) Regents, Univ. State New York, New York State Mus. 53: 853. 1900. Syn. nov. *Scirpus validus* Vahl var. *condensatus* (C. H. Peck) Beetle, Univ. Wyoming Publ. 13: 6. 1948. TYPE: U.S.A. New York: [Cattaraugus Co.], Lime Lake, 5 and 20 Aug. 1899, F. E. Fenno 17 (holotype, NYS, !Schuyler).

Distribution. Eastern North America.

b. *Schoenoplectus acutus* var. *occidentalis* (S. Watson) S. G. Smith, comb. nov. Basionym: *Scirpus lacustris* var. *occidentalis* S. Watson, Bot. California 2: 218. 1880. *Scirpus occidentalis* (S. Watson) Chase, Rhodora 6: 68. 1904. *Scirpus acutus* var. *occidentalis* (S. Watson) A. A. Beetle, Univ. Wyoming Publ. 13: 5. 1948. TYPE: U.S.A. New Mexico: 1851-1852, C. Wright 1940 (mature achenes) (lectotype, NY, selected here; isolectotype, UC).

Scirpus malheurensis L. F. Henderson, *Rhodora* 32: 20. 1930. *Scirpus acutus* var. *malheurensis* (L. F. Henderson) A. A. Beetle, *Univ. Wyoming Publ.* 13: 5. 1948. TYPE: U.S.A. Oregon: Harney Co., in water or on wet shores of Malheur Lake, 15 July 1927, L. F. Henderson 8655 (holotype, ORE, !Schuyler; isotype, CAS).

Scirpus rubiginosus A. A. Beetle, *Amer. J. Bot.* 28: 697. 1941. Syn. nov. *Schoenoplectus rubiginosus* (A. A. Beetle) Sojak, *Čas. Nár. Mus., Odd. Přír.* 140: 127. 1972. TYPE: U.S.A. California: Marin Co., along tide flat N of Stinson Beach, 9 May 1941, Beetle & Constance 2686 (lectotype [imm.], UC, selected here, with specimen of *Sch. acutus* × *californicus* on sheet designated by Beetle as holotype; isoelectotypes [imm.], CAS, GH, NY—on sheets with specimen of *Sch. acutus* × *californicus*). [Other sheets from the type collection at CAS, F, KSC, RSA, and US are *Sch. acutus* × *californicus*.]

Chase (1904: 68) included all North American *Scirpus acutus* in *Scirpus occidentalis* (S. Watson) Chase.

I have seen nine specimens that Watson annotated as *Scirpus lacustris* var. *occidentalis*. The two not cited by Chase (1904: 69) are: (1) the lectotype of *Schoenoplectus acutus* var. *occidentalis*, and (2) U.S.A. California: Sacramento Valley, Wilkes Expedition [1842], (no collector given) #1788 (NY). Of all, only the Wright and Wilkes Expedition specimens bear achenes. I selected the Wright 1940 specimen as the lectotype because it is typical of *Sch. acutus* var. *occidentalis* throughout its range in its lenticular achenes and mostly bifid styles, whereas the mostly trigonous achenes and mostly trifid styles of the Wilkes Expedition specimen are known only from low elevations in California.

The following collections from the type locality closely match the type collection of *Scirpus rubiginosus*: U.S.A. California: Marin Co., S end of Bolinas Lagoon ca. ½ mi. N of village of Stinson Beach, fresh water seepages at edge of tidal salt marsh. *Schoenoplectus acutus* var. *occidentalis* (achenes present): 20 Aug. 1969, S. G. Smith 4713 (MO, PH, UC, US), 24 July 1973, S. G. Smith 5557 (GH, NY). *Schoenoplectus acutus* × *californicus* (achenes lacking): 20 Aug. 1969, S. G. Smith 4714 (PH, UC, US, UW), 24 July 1973, S. G. Smith 5556 (GH, MO, NY).

For the lectotype of *Scirpus rubiginosus* I selected the specimen of *Schoenoplectus acutus* rather than the hybrid because: (1) Beetle's protologue clearly indicates that his name applies to plants correctly placed in *Sch. acutus* rather than in the hybrid; and (2) Beetle described the achenes, which are lacking in the type specimens collected in May but are present in my collections of *Sch. acutus*, cited above, collected in July and August.

2. *Schoenoplectus tabernaemontani* (C. C. Gmelin) Palla, *Verh. K. K. Zool.-Bot. Ges. Wien* 38, Sitzb.: 49. 1888. Basionym: *Scirpus tabernaemontani* C. C. Gmelin, *Fl. Bad.* 1: 101. April or May 1805. *Scirpus lacustris* L. subsp. *tabernaemontani* (C. C. Gmelin) Syme, *Engl. Bot. ed.* 10, 3: 63. 1870. *Scirpus lacustris* var. *tabernaemontani* (C. C. Gmelin) Doell, *Rhein. Fl.* 165. 1943. *Schoenoplectus lacustris* subsp. *tabernaemontani* (C. C. Gmelin) Löve & Löve, *Folia Geobot. Phytotax.* 10: 275. 1975. TYPE: Europe: in Rheni vivinia (holotype, KR, !photo, det. on sheet by Schuyler in 1974).

Scirpus validus Vahl, *Enum. Pl.* 2: 268. Oct. 1805 or later. *Scirpus lacustris* var. *validus* (Vahl) Kuntze, *Feddes Repert.* 23: 200. 1926 or 1927. *Schoenoplectus validus* (Vahl) A. Löve & D. Löve, *Bull. Torrey Bot. Club* 81: 33. 1954. *Scirpus lacustris* subsp. *validus* (Vahl) T. Koyama, *Canad. J. Bot.* 40: 927. 1962. *Schoenoplectus lacustris* (L.) Palla subsp. *validus* (Vahl) T. Koyama, *Occas. Pap. Pauahi Bishop Mus.* 29: 128. 1989. TYPE: e Caribaeis ded. Dr. Banks, *Herb. Vahl s.n.* (holotype, C, !photo, !Schuyler).

Scirpus glaucus J. E. Smith, *Engl. Bot.* 33, pl. 2321. 1811. nom. illeg., not *Scirpus glaucus* Lamarck, *Tabl. Encycl.* 1: 142. 1791. *Scirpus lacustris* subsp. *glaucus* (J. E. Smith) C. J. Hartman, *Sv. Norsk Exc.-Fl.* 10. 1846. *Schoenoplectus lacustris* (L.) Palla subsp. *glaucus* (J. E. Smith) Becherer, *Feddes Repert.* 25: 11. 1928. TYPE: Scotland. Galloway, on the sides of a saltmarsh on the W of Ardbigland, 1800, J. Mackay 6 (lectotype, LINN—Herb. Smith 105.25, selected here, !photo, det. by Clive Jermy (BM)).

Scirpus tabernaemontani forma *luxurians* Miquel, *Ann. Mus. Bot. Lugd.-Batav.* 2: 143. 1865. *Scirpus lacustris* subsp. *validus* var. *luxurians* (Miquel) T. Koyama, *Canad. J. Bot.* 40: 927. 1962. *Scirpus lacustris* subsp. *creber* var. *luxurians* (Miquel) T. Koyama, *Phytologia* 8: 458. 1963. *Schoenoplectus validus* subsp. *luxurians* (Miquel) Sojak, *Čas. Nár. Mus., Odd. Přír.* 141: 62. 1972. TYPE: Japan. In ripa fluminis Jahaki, Gawa ins Nippon, #633 (lectotype, L, selected here—not seen, !Schuyler).

Scirpus validus var. *creber* Fernald, *Rhodora* 45: 283. 1943. *Schoenoplectus validus* (M. Vahl) A. Löve & D. Löve var. *creber* (Fernald) A. Löve & D. Löve, *Bull. Torrey Bot. Club* 81: 33. 1954. *Scirpus validus* subsp. *creber* (Fernald) T. Koyama, *Phytologia* 8: 458. 1963. *Schoenoplectus lacustris* subsp. *creber* (Fernald) A. Löve & D. Löve, *Taxon* 30: 849. 1981. TYPE: U.S.A. New York: Fisher's Island, 10–15 Aug., H. St. John 2581 (holotype, GH).

The typification of *Scirpus glaucus* J. E. Smith is important because it is the basionym for the above widely used names *Scirpus lacustris* subsp. *glaucus* and *Schoenoplectus lacustris* subsp. *glaucus*. Nich-

olas Turland (BM, pers. comm. 1994) provided the following information: Neither the collection by Borrer from Sussex, England, used to produce the illustration of *Scirpus glaucus* in *English Botany*, nor any material from Norfolk, England, as mentioned in the protologue to plate 2321, appears to exist at BM. The only other specimen mentioned in the protologue is *Mackay 6*, which was examined for me by Clive Jermy (BM); it has bifid styles and dark brown papillae on the floral scales and is a typical example of northwestern European *S. tabernaemontani*.

My studies and those of A. E. Schuyler (pers. comm.) indicate that *Schoenoplectus tabernaemontani* and *Sch. validus* are definitely conspecific. They differ by very few characteristics and intergrade completely in both North America and Eurasia. When Raymond (1957: 140) united these two species he expressed doubts: "I have tentatively referred [a single specimen from Indo-China] to *S. tabernaemontani*. . . . *S. tabernaemontani* and *S. validus* are very closely related if not conspecific." Koyama (1962) combined European *S. tabernaemontani* with the North American *S. acutus* Muhlenberg ex Bigelow in *S. lacustris* L. subsp. *glaucus* (J. E. Smith) C. J. Hartman, placed Western Hemisphere and Hawaiian plants in *S. lacustris* L. subsp. *validus* (M. Vahl) T. Koyama var. *validus*, and placed Asian *S. tabernaemontani* in *S. lacustris* subsp. *validus* var. *luxurians* (Miquel) T. Koyama. Later, however, Koyama (1978: 209) treated *S. tabernaemontani* and *S. validus* as separate but doubtfully distinct species each occurring in both North America and Eurasia. The known distribution of *Sch. tabernaemontani* as here treated is the boreal to tropical zones of most of Eurasia and North America, the Caribbean, parts of Africa and temperate South America, the Hawaiian and other Pacific Islands, Australia, and New Zealand. Variation in *Sch. tabernaemontani* sensu lato is complex, and my attempts to clearly delimit infraspecific taxa have led me to the opinion that delimitation of infraspecific taxa is premature. Northwestern European plants have densely to sparsely reddish scabrous floral scales, especially near the bases of the spikelets; I have seen very similar plants from scattered localities in northern Canada, along both Atlantic and Pacific coasts of North America, and southern Africa. *Scirpus validus* var. *creber* is distinguished only by its short floral scales, which partially expose the achenes, and intergrades with forms with longer scales over most of North America, and I have seen similar forms from northwestern Europe.

3. *Schoenoplectus* × *steinmetzii* (Fernald) S. G. Smith (pro sp.), comb. nov. Basionym: *Scirpus steinmetzii* Fernald, *Rhodora* 45: 286 and plate 766. 1943. TYPE: U.S.A. Maine: Penobscott County, bank of Passadumkeag Stream [ca. 2 mi. E of the village of], Passadumkeag, 12 Aug. 1937, *F. H. Steinmetz 355* (holotype, GH; isotypes, MAINE, NY, US).

I consider *Schoenoplectus* × *steinmetzii* to be a hybrid between *Schoenoplectus heterochaetus* (Chase) Sojak and *Schoenoplectus tabernaemontani* (C. C. Gmelin) Palla.

Koyama (1962: 927) placed *Scirpus steinmetzii* in synonymy under *S. lacustris* subsp. *validus* (Vahl) T. Koyama var. *validus* and treated *S. heterochaetus* Chase as *S. lacustris* subsp. *lacustris* var. *tenuiculmis* (Sheldon) T. Koyama.

Scirpus steinmetzii has previously been reported only from Passadumkeag Stream in the immediate vicinity of the type locality, where the plants in the several known colonies are very similar to each other and are intermediate between *Schoenoplectus heterochaetus* and *Sch. tabernaemontani* in leaf, culm air cavity, floral scale, style, achene, and perigonal bristle characters. The protologue of *S. steinmetzii* erroneously describes the styles as bifid, the perigonal bristles as 0–2, and the achenes as plano-convex. The plants at the type locality produce very few achenes, in which the seeds are often aborted, and most of the pollen grains are abnormal when stained by cotton blue in lacto-phenol (confirmed by Arthur Haines, MAINE, pers. comm. 1994). Although *Sch. tabernaemontani* is common in the immediate vicinity of the type locality, the closest known stations of *Sch. heterochaetus* are each ca. 360 km distant (Lake Champlain and vicinity, where it is common and hybridizes with *Sch. acutus*, and eastern Massachusetts, where it may be extirpated). The region of the type locality, however, includes vast roadless areas with numerous wetlands that have been little explored botanically.

Other specimens from Ontario, Quebec, Iowa, Massachusetts, New York, Minnesota, and Wisconsin are similar to specimens from the type population, but identification of most is uncertain because they lack achenes. The following collection from a population I have studied is nearly indistinguishable from specimens from the type population except that it produces many achenes containing fully formed seeds: U.S.A. Wisconsin: Rock Co., ca. 1.5 mi. SW of Lima Center along Wis. Hwy. 59, T4N, R14E, section 29, many clones in ca. 1 m of water,

in undrained depression with *Schoenoplectus heterochaetus* and *Sch. tabernaemontani*, 26 Aug. 1993, S. G. Smith 5208 (GH, MAINE, NU, WIS).

4. *Schoenoplectus pungens* (M. Vahl) Palla, Bot. Jahrb. Verh. K. K. Zool.-Bot. Ges. Wien 38, Sitzb.: 49. 1888. Basionym: *Scirpus pungens* M. Vahl, Enum. Pl. 2: 255. 1805. TYPE: Europe?: Erhart misit, *herb. Vahl s.n.* (holotype, C, !photo, !Schuyler).

Schoenoplectus pungens was long known by the name *Scirpus americanus* Persoon, misapplied (*Schoenoplectus americanus* (Persoon) Volkart ex Schinz & R. Keller). The type of *Scirpus americanus* Persoon is conspecific with plants long known by the later synonym *Scirpus olneyi* A. Gray but correctly known as *Sch. americanus* (Schuyler, 1974).

I agree with Koyama (1963) that North American and European *Schoenoplectus pungens* can be divided into three varieties, although the characteristics of these are somewhat different from those he gave, and in my opinion the differences are too small for the recognition of subspecies.

4a. *Schoenoplectus pungens* var. *pungens*.

Synonymy and distribution as given by Koyama (1963: 1117) for *Scirpus americanus* Persoon subsp. *americanus* var. *americanus*.

4b. *Schoenoplectus pungens* var. *longispicatus* (N. L. Britton) S. G. Smith, comb. nov. Basionym: *Scirpus americanus* Persoon var. *longispicatus* N. L. Britton, Trans. New York Acad. Sci. 11: 78. 1892. *Scirpus longispicatus* (N. L. Britton) Smyth, Trans. Kansas Acad. Sci. 16: 163. 1899. *Schoenoplectus americanus* subsp. *longispicatus* (N. L. Britton) Sojak, Čas. Nár. Mus., Odd. Přír. 141: 62. 1972. *Scirpus pungens* var. *longispicatus* (N. L. Britton) Cronquist, Intermountain Flora 6: 74. 1977. *Schoenoplectus pungens* subsp. *longispicatus* (N. L. Britton) A. Löve & D. Löve, Taxon 30: 849. 1981. TYPE: U.S.A. New Mexico: 1851 or 1852, C. Wright 1963 (lectotype, NY, selected here, !Schuyler; isolectotypes, PH, US, GH 2 sheets).

Scirpus solispicatus Lunell, Amer. Midl. Naturalist 4: 230. 1915. TYPE: U.S.A. North Dakota: Benson Co., Butte, 18 Aug. 1907, J. Lunell s.n. (lectotype, MIN, selected here, !Schuyler).

The lectotype sheet of *Schoenoplectus pungens* var. *longispicatus*, and the isolectotype sheets at US and GH, all bear mixed collections of *Schoenoplectus pungens* and putative *Sch. americanus* × *pungens* hybrids; and sheet #28000 at GH also bears a specimen of *Sch. americanus* (which a note handwritten on the sheet suggests belongs to a collection from Nevada distributed by Wheeler in 1871). I selected the specimens of *Sch. pungens* as the lectotypes because they are typical of most western North American *Sch. pungens* and bear mature achenes, which are described in the original description, whereas the putative hybrid specimens are intermediate between *Sch. americanus* and *Sch. pungens* and lack achenes. The other collection (Colorado: Platte R., Dr. Geo. Smith) that Britton cited in the protologue has not been located.

Three other specimens of *Scirpus solispicatus* collected by Lunell at Butte in 1906 (GH, MIN, NY) are very similar to the lectotype of *Scirpus solispicatus*, which I chose because of its mature achenes with intact bristles.

Schoenoplectus pungens var. *longispicatus* is composed of at least the North American plants included by Koyama (1963: 1118) in *Scirpus americanus* Persoon subsp. *americanus* var. *longispicatus* (N. L. Britton) T. Koyama.

4c. *Schoenoplectus pungens* (M. Vahl) Palla var. ***badius*** (K. Presl) S. G. Smith, comb. et stat. nov. Basionym: *Scirpus badius* K. Presl, Reliq. Haenk. 1: 193. 1828. TYPE: U.S.A. California: hab. ad Monte-Rey, Haenke s.n. (holotype, PR, !Schuyler).

Schoenoplectus pungens var. *badius* is composed of at least the North American plants included in *Scirpus americanus* subsp. *monophyllus* (K. Presl) T. Koyama var. *monophyllus* (Koyama, 1963: 1118).

My examination of the types and original descriptions indicate that *Scirpus badius* K. Presl rather than *Scirpus monophyllus* K. Presl is the correct basionym for a taxon including the North American Pacific Coastal plants of *Schoenoplectus pungens*. Koyama (1963) placed *Scirpus badius* in synonymy under *Sch. americanus* subsp. *monophyllus* var. *monophyllus*, based on *Scirpus monophyllus* K. Presl, Reliq. Haenk. 1: 193. 1828, TYPE: Peru: Montana Peruvia, Haenke s.n. (holotype, PR, !Schuyler). All three specimens on the type sheet of *S. monophyllus* (photo in Koyama, 1963) are typical of *Sch. americanus* rather than

the Pacific Coastal North American *Sch. pungens* in their leaves, floral scales, achenes, and perigonal bristles. The styles are a mixture of bifid and trifid, which can occur in either species. The culms, however, have more-or-less flat sides and are very firm, retaining their trigonous shape on pressing, which is fairly common in *Sch. pungens* but rare in *Sch. americanus*, in which the culm sides are typically deeply concave and readily flattened on pressing. Except for the style number, the pertinent parts of the original description of *Scirpus monophyllus*, "Colmo triquetro inferne monophyllo, . . . stylo bifido, . . . caryopsidem obovatum plano-convexam . . ." agree with the type. Thus, the name *Scirpus monophyllus* K. Presl applies to plants belonging to *Schoenoplectus americanus* rather than to *Sch. pungens*.

In the case of *Scirpus badius*, the type is a fine specimen with a rhizome and four complete shoots bearing inflorescences with some intact styles and mature achenes. It is an excellent example of the North American Pacific Coastal plants of *Schoenoplectus pungens*. The original description of *S. badius*, which reads in part: "Colmo triquetro foliato, . . . stylo trifido, . . . Setae sex retrorsum scabrae, caryopsidae una quarta parte breviores. Caryopsis obovata trigona. . .," agrees well with the type.

5. *Schoenoplectus* × *contortus* (E. H. Eames) S. G. Smith, comb. nov. Basionym: *Scirpus olneyi* A. Gray var. *contortus* E. H. Eames, *Rhodora* 9: 220. 1907. *Scirpus* × *contortus* (E. H. Eames) T. Koyama, *Canad. J. Bot.* 41: 1123. 1963. TYPE: U.S.A. Connecticut: Milford, plentiful in a brackish marsh at Pond Point, 28 Sep. 1907, E. H. Eames 5847 (holotype, GH, ex herb. Eames; isotype, MO).

6. *Schoenoplectus hallii* (A. Gray) S. G. Smith, comb. nov. Basionym: *Scirpus hallii* A. Gray, *Man. ed. 3, addend.*: xcvi. 1862. *Scirpus supinus* L. var. *hallii* (A. Gray) A. Gray, *Man. ed. 5*: 563. 1867. *Scirpus uninodis* (Delile) Boissier var. *hallii* A. A. Beetle, *Amer. J. Bot.* 29: 656. 1942. TYPE: U.S.A. Illinois: Mason Co. or Menard Co., wet banks of pond, [Aug. 1860 or 1861], E. Hall [& D. Vasey & M. S. Bebb?] s.n. (holotype, GH).

Raynal (1976: 141) placed *Schoenoplectus hallii* in synonymy under *Sch. erectus* (Poir.) Palla ex J. Raynal.

The type locality, date, names of collectors, and number of collections are all in doubt, as indicated by differences among the protologue, Gray's an-

notation on the holotype, labels on the holotype and several possible isotypes (F, NY, US), and a letter from Gray [to Torrey?] at NY.

7. *Bolboschoenus glaucus* (Lamarck) S. G. Smith, comb. nov. Basionym: *Scirpus glaucus* Lamarck, *Tabl. Encycl.* 1: 142. 1791. *Scirpus maritimus* L. [var.] *glaucus* (Lamarck) Nees in Wight, *Contr. Bot. India* 111. 1834. TYPE: Senegal, herb. Lamarck sheet 673/14, *Rousillon s.n.* (holotype, P, !photo, !Schuyler; det. as *Scirpus maritimus* L. by J. Raynal in 1966).

Examination of types and protologues indicates that *Scirpus glaucus* Lamarck is the correct name for the species to which Beetle (1942: 85) and Koyama (1962: 936) misapplied the later name *Scirpus tuberosus* Desfontaines, *Fl. Atlant.* 1: 50. 1798; synonym: *Scirpus maritimus* L. [var.] *tuberosus* (Desfontaines) Roemer & Schultes, *Syst. Veg.* 2: 139. 1817; *Reigera maritimus* [var.] *tuberosus* (Desfontaines) Opiz, *Seznam*: 83. 1852; *Bolboschoenus tuberosus* (Desfontaines) Hadac, *Bull. Coll. Sci. Baghdad* 6: 13. 1961. The type of *S. tuberosus*, [Algeria]: habitat in lacubus prope La Calle, *Herbier de la Flore Atlantique* donne au Museum, par M. Desfontaines, s.n. (holotype, P, !photo; det. as *Scirpus maritimus* L. by A. E. Schuyler in 1966), is probably *S. maritimus* or a close relative in having most of the spikelets in a sessile mass, bifid and trifid styles, and lenticular achenes. The protologue, which reads in part: "spiculis congestis. . . sessilibus aut brevio pedunculatis," agrees with the type. However, the type of *S. glaucus* is typical of the entity sometimes known as *S. tuberosus* in its achenes and trifid styles (Schuyler, pers. comm.) and its paniculate inflorescence with most of the spikelets on rays. The protologue of *S. glaucus*, which reads in part "umbella composita subpaniculata, spiculis pedicelatis," agrees with the type.

Bolboschoenus glaucus is widely confused with *Scirpus maritimus* L. (*Schoenoplectus maritimus* (L.) Lye, *Bolboschoenus maritimus* (L.) Palla). Its achenes were described by Browning & Gordon-Gray (1993) under "*Bolboschoenus maritimus* entity 2." It is widespread in the warmer parts of the Old World and sparingly introduced into North America.

8. *Isolepis molesta* (M. C. Johnston) S. G. Smith, comb. nov. Basionym: *Scirpus molestus* M. C. Johnston, *Southw. Naturalist* 9: 310. 1964. TYPE: U.S.A. Texas: Walker Co., Huntsville, 27 Apr. 1944, S. R. Warner 20,000 (holotype, TEX not seen, !Schuyler).

- 9. *Trichophorum clementis*** (M. E. Jones) S. G. Smith, comb. nov. Basionym: *Scirpus clementis* M. E. Jones, Contr. W. Bot. 14: 21. 1912. TYPE: U.S.A. California: Rae Lake, King's River, alpine, 20 July 1910, Mrs. Clements s.n. (lectotype, selected here, POM 111694, !Schuyler; isolectotypes, DS, POM 111695).

Scirpus yosemitanus F. J. Smiley, Univ. Calif. Publ. Bot. 9: 108. 1921. TYPE: U.S.A. California: Yosemite National Park, Tuolumne Meadows, soda springs, 8 Aug. 1898, J. W. Congdon s.n. (holotype, GH).

- 10. *Trichophorum clintonii*** (A. Gray) S. G. Smith, comb. nov. Basionym: *Scirpus clintonii* A. Gray, Amer. J. Sci., ser. 2, 38: 290. 1864. TYPE: U.S.A. New York: between Buffalo and Williamsville, June 1864, G. W. Clinton s.n. (holotype, GH, !Schuyler; isotypes, NY, !Schuyler; US, not seen; K not seen, !Schuyler). Two possible isotypes at F bear insufficient data.

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